

10/534 468

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



534 468

(43) International Publication Date
3 June 2004 (03.06.2004)

PCT

(10) International Publication Number
WO 2004/047455 A1

(51) International Patent Classification⁷: H04N 7/50, 7/30

(72) Inventors; and

(21) International Application Number:
PCT/GB2003/004996

(75) Inventors/Applicants (for US only): GHANBARI, Mohammed [GB/GB]; 14 Crome Close, Colchester, Essex CO3 4QQ (GB). SUN, Kai [CN/GB]; c/o Department of ESE, University of Essex, Colchester, Essex CO4 3SQ (GB).

(22) International Filing Date:
18 November 2003 (18.11.2003)

(74) Agent: LLOYD, Barry, George, William; Bt Group Legal Intellectual Property Department, Holborn Centre, 8th Floor, 120 Holborn, London EC1N 2TE (GB).

(25) Filing Language: English

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

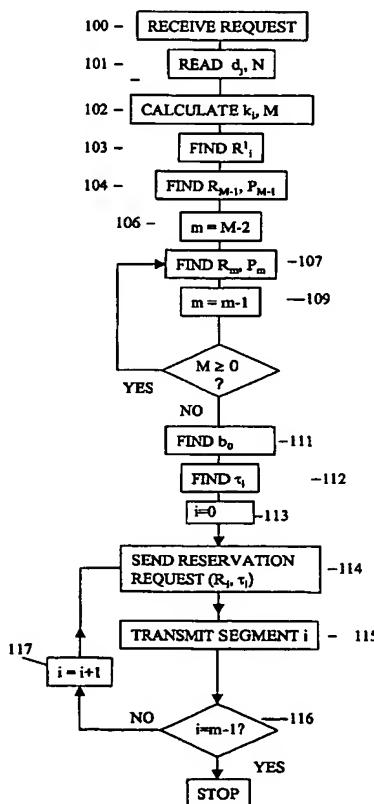
(26) Publication Language: English

(30) Priority Data:
0226872.0 18 November 2002 (18.11.2002) GB
0322767.5 29 September 2003 (29.09.2003) GB

(71) Applicant (for all designated States except US): BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY [GB/GB]; BT Group Legal, Intellectual Property Department, PP C5A ,BT Centre, 81 Newgate Street, London EC1A 7AJ (GB).

[Continued on next page]

(54) Title: TRANSMISSION OF VIDEO



(57) **Abstract:** Compressed recorded video is to be transmitted over a variable bit-rate link, using bandwidth reservation. In order to determine the transmission rate that is to be used (and reserved) at any given time, in such a way as to make the two match so as to minimise wasted bandwidth, the data stream is split into chunks chosen such that the average bit rate for the chunk as a whole is no less than the average bit rate for any shorter chunk starting at the same point. The chunk can then be transmitted using this average rate without any buffering problems. Preferably one chooses chunks so that the average bit rate for the chunk is no less than that for any shorter or longer chunk starting at the same point. This has the benefit that a request for bandwidth never has to ask for an allocation that is higher than that specified in any previous such request. In systems that switch between streams of different degrees compression, the switching points can with advantage be chosen to coincide with the inter-chunk boundaries.

WO 2004/047455 A1



(84) **Designated States (regional):** ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report